

THAT WHICH IS CLAIMED IS:

1. A base station for providing wireless communication of digital signals over a plurality of digital communication paths, the digital signals being communicated using at least one radio frequency channel via Code Division Multiple Access (CDMA) modulated radio signals, the base station comprising:

a wireless transceiver for establishing communication sessions over the plurality of digital communication paths;

a plurality of buffers for storing data to be transmitted by said wireless transceiver, each buffer being associated with a particular digital communication path and having at least one threshold associated with a level of data stored therein;

a transmission processor for allocating a plurality of code channels within the at least one radio frequency channel to transmit the stored data during the communication sessions; and

a channel resource assignor connected to said transmission processor for monitoring a level of data stored in each buffer and for computing an urgency factor for each buffer based upon the at least one threshold associated therewith, the urgency factor representing a relative need for transmitting the stored data over the particular digital communication path associated with that buffer, said channel resource assignor comparing the computed urgency factors for the plurality of buffers for determining how many code channels are to be allocated to each digital communication path.

2. A base station according to Claim 1 wherein the at least one threshold associated with each buffer comprises a plurality of thresholds.

3. A base station according to Claim 1 wherein the computed urgency factors represent how full the plurality of buffers are.

4. A base station according to Claim 1 wherein the computed urgency factor for each buffer is also based upon a number of code channels currently allocated to the particular digital communication path associated therewith.

5. A base station according to Claim 1 wherein the computed urgency factor for each buffer is also based upon how much time has passed since stored data has been transmitted therefrom.

6. A base station according to Claim 1 wherein the computed urgency factor for each buffer is also based upon a quality of service of the communication sessions.

7. A base station according to Claim 6 wherein the quality of service is based upon at least one of throughput, data rate, latency and jitter.

8. A base station according to Claim 1 wherein the digital signals comprise at least one of voice and data signals.

9. A base station according to Claim 1 wherein the wireless communication of digital signals is performed with a plurality of subscriber units over the plurality of digital communication paths.

10. A base station according to Claim 9 wherein the at least one radio frequency channel comprises:

a first radio frequency channel for establishing forward code channels between said wireless transceiver and the plurality of subscriber units, with the stored data from said plurality of buffers being transmitted by said wireless transceiver on the forward code channels; and

a second radio frequency channel for establishing reverse code channels between the plurality of subscriber units and said wireless transceiver.

11. A base station according to Claim 10 wherein each subscriber unit comprises a buffer for storing data to be transmitted to said wireless transceiver, and having at least one threshold associated with a level of data stored therein, each subscriber unit transmitting to said wireless transceiver on a reverse code channel the level of data stored in its buffer with respect to the threshold associated therewith; and wherein said channel resource assignor also computes an urgency factor for each subscriber unit.

12. A base station according to Claim 10 wherein the forward and reverse code channels are multiplexed on a single radio frequency channel.

13. A base station according to Claim 10 wherein the forward and reverse code channels are on different radio frequency channels.

14. A subscriber unit for providing wireless communication of digital signals between terminal equipment connected therewith and a digital communication path, the digital signals being communicated using at least one radio frequency channel via Code Division Multiple Access (CDMA) modulated radio signals, the subscriber unit comprising:

- a wireless transceiver for establishing a respective communication session over the digital communication path;

- a buffer for storing data to be transmitted by said wireless transmitter, and having at least one threshold associated with a level of data stored therein;

- a transmission processor for receiving over the digital communication path at least one allocated code channel within the at least one radio frequency channel to transmit the data stored in said buffer during the respective communication session;

- said wireless transceiver transmitting a level of data stored in said buffer with respect to the at least one threshold associated therewith;

- said transmission processor receiving over the digital communication path an adjustment in a number of at least one allocated code channel within

the at least one radio frequency channel received based upon an urgency factor, the urgency factor being computed for representing a relative need for transmitting the data stored in said buffer over the digital communication path.

15. A subscriber unit according to Claim 14 wherein the wireless communication of digital signals is performed with a base station over the respective digital communication path, with the urgency factor being computed by the base station, the base station comparing the computed urgency factor with other computed urgency factors corresponding to other subscriber units, and reallocating a number of code channels to the subscriber unit.

16. A subscriber unit according to Claim 14 wherein the computed urgency factor represents how full said buffer is.

17. A subscriber unit according to Claim 14 wherein the computed urgency factor for said buffer is also based upon a number of code channels currently allocated to said transmission processor.

18. A subscriber unit according to Claim 14 wherein the computed urgency factor for said buffer is also based upon a how much time has passed since data has been transmitted therefrom.

19. A subscriber unit according to Claim 14 wherein the computed urgency factor for said buffer is

also based upon a quality of service of the subscriber unit.

20. A subscriber unit according to Claim 19 wherein the quality of service is based upon at least one of throughput, data rate, latency and jitter.

21. A subscriber unit according to Claim 14 wherein the digital signals comprise at least one of voice and data signals.

22. A subscriber unit according to Claim 15 wherein the at least one radio frequency channel comprises:

a first radio frequency channel for establishing a forward code channel between the base station and said wireless transceiver, with the at least one allocated channel being transmitted by the base station on the forward code channel; and

a second radio frequency channel for establishing a reverse code channel between said wireless transceiver and the base station, with the level of data stored in said buffer with respect to the threshold associated therewith being transmitted by said wireless transceiver on the reverse code channel.

23. A subscriber unit according to Claim 22 wherein the forward and reverse code channels are multiplexed on a single radio frequency channel.

24. A subscriber unit according to Claim 22 wherein the forward and reverse code channels are on different radio frequency channels.

25. A digital communication system comprising:

a plurality of subscriber units for providing wireless communication of digital signals; and

a base station for establishing communication sessions with said plurality of subscriber units over a plurality of digital communication paths, said base station comprising

a plurality of buffers for storing data to be transmitted to said plurality of subscriber units, each buffer being associated with a particular subscriber unit and having at least one threshold associated with a level of data stored therein,

a transmission processor for allocating a plurality of code channels within the at least one radio frequency channel to transmit the data stored in said plurality of buffers during the communication sessions, at least one of said subscriber units being allocated at least one code channel, and

a channel resource assignor connected to said transmission processor for monitoring a level of data stored in each buffer and for computing an urgency factor for each buffer based upon the at least one threshold associated therewith, the urgency factor representing a relative need for transmitting the stored data in a respective buffer to the subscriber unit associated with that buffer, said channel resource assignor comparing the computed urgency factors for said plurality

of buffers for determining how many code channels to allocate to each subscriber unit.

26. A digital communication system according to Claim 25 wherein the at least one threshold associated with each buffer comprises a plurality of thresholds.

27. A digital communication system according to Claim 25 wherein the computed urgency factors represent how full said plurality of buffers are.

28. A digital communication system according to Claim 25 wherein the computed urgency factor for each buffer is also based upon a number of code channels currently allocated to the particular subscriber unit associated therewith.

29. A digital communication system according to Claim 25 wherein the computed urgency factor for each buffer is also based upon a how much time has passed since stored data has been transmitted therefrom to the particular subscriber unit associated therewith.

30. A digital communication system according to Claim 25 wherein the computed urgency factors are based upon a quality of service of the communication sessions.

31. A digital communication system according to Claim 30 wherein the quality of service is based upon at least one of throughput, data rate, latency and jitter.

32. A digital communication system according to Claim 25 wherein the digital signals comprise at least one of voice and data signals.

33. A digital communication system according to Claim 25 wherein the at least one radio frequency channel comprises:

a first radio frequency channel for establishing forward code channels between said base station and said plurality of subscriber units, with the data stored in said plurality of buffers being transmitted on the forward code channels; and

a second radio frequency channel for establishing reverse code channels between said plurality of subscriber units and said base station.

34. A digital communication system according to Claim 33 wherein each subscriber comprises a buffer for storing data to be transmitted to said base station and has at least one threshold associated with a level of data stored therein, each subscriber unit transmitting to said base station on a reverse channel the level of data stored in its buffer with respect to the threshold associated therewith; and wherein said channel resource assignor in said base station also computes an urgency factor for each subscriber unit.

35. A digital communication system according to Claim 33 wherein the forward and reverse code channels are multiplexed on a single radio frequency channel.

36. A digital communication system according to Claim 33 wherein the forward and reverse code channels are on different radio frequency channels.